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NEW OR NOTEWORTHY ASCOMYCETES AND LOWER FUNGI FROM NEW MEXICO

CHARLES EDWARD FAIRMAN

The following notes are based upon a collection of microscopic fungi from New Mexico by Paul C. Standley. The specimens were mostly gathered by Mr. Standley in the vicinity of Ute Park, Colfax County, at an altitude of 2200 to 2900 meters during August and September, 1916. A few were collected at other places, especially at Baldy Peak, above timber line, at an altitude of 3600 meters. The details of the trip have been personally narrated by Mr. Standley in *Mycologia* 10: 34. The numbers in parenthesis are the collection numbers. Where no locality is mentioned in the text Ute Park is the place of collection. Prof. John Dearnness has examined numbers 14253, 14565, 14754, 14772 and 14780, and the writer is deeply indebted to him for assistance.

ASCOMYCETES

Order: SPHAERIALES

Family: ERSIBACEAE

PHYLLACTINIA CORYLEA (Pers.) Karst.

On bare wood of dead branches of *Alnus tenuifolia* Nutt. (14772 p.p.).

The occurrence of this fungus on bare wood is noteworthy. A severe infection of the leaves of trees by members of the Erysibaceae is often followed by an extension of the disease to surrounding objects. The writer has for several years noticed a tree of horsechestnut which is subject to annual attacks of *Uncinula flexuosa* Peck. Underneath this tree a species of *Corticium* upon fallen branches, and leaves of cultivated rhododendrons are found with a similar infection by contiguity.

On blackened areas around the base of branchlets there were a

few perithecia of a *Thyridium* with 5-6-septate, muriform ascospores, $24-26 \times 6-9 \mu$, evidently near *T. cingulatum*.

SPHAEROTHECA HUMULI (DC.) Burrill

On leaves of *Heuchera parvifolia* Nutt. (13803).

Family: SPHAERIACEAE

ALLANTOSPORAE

EUTYPELLA HERBICOLA E. & E.

On old stems of *Artemisia frigida* Willd. (14745) and *Atriplex canescens* (Pursh) Nutt. (14715).

Eutypella Brunaudiana Ribis-aurei var. nov.

Pseudostromata scattered or gregarious, base discoid or angular, seated on the inner bark, finally erumpent and girt by the ruptured epidermis, 1-4 mm. in diam., imperfectly circumscribed by a black line, and when maturely erumpent presenting a roughened black disc; perithecia 4-20, globose or angular, with very thick walls and a waxy, glistening, *Massaria*-like aspect upon section, 300-500 μ in diam., black; ostiola short, obese, obtuse at the apex, roughening the disc; asci narrow, clavate, long-pedicellate, 8-spored, $75 \times 6.75-10 \mu$; spores 8, irregularly biseriate, allantoid, hyaline, $10-13.5 \times 3-4 \mu$, with a nucleus in each end.

On old branches of *Ribes aureum* Pursh (14736).

Diatrype Standleyi sp. nov.

Stromata scattered, at times coalescent, small, pulvinate or verruciform, 1-5 mm. in length, acute-ellipsoid or lanceolate, immersed, then erumpent, internally, at first, of a dirty-white tint, becoming rusty in spots and finally brown, externally roughened, black; perithecia 1-15, subcircinately or irregularly arranged, .25-.5 mm. in diam., walls thick, ostiola projecting, radiately cleft, roughening the disc; asci clavate, long stipitate, 8-spored, $70-125 \times 7-8 \mu$; spores allantoid, biseriate above, uniseriate toward the narrowing stipe, straight or curved, hyaline then yellowish, $10-13 \times 3-3.5 \mu$.

On dead branches of *Cercocarpus montanus* Raf. (13659 p.p. and 14789).

Externally this resembles *Diatrype cornuta* E. & E., but the stroma is differently tinted, and the asci and spores are larger.

DIATRYPE ALBOPRUINOSA (Schw.) C. & E.

On dead branches of *Acer neomexicanum* Greene (14683 p.p.) and on old scrub oak branches (*Quercus Fendleri* Liebm. ?) (13660 and 14693 p.p.).

DIATRYPELLA PLACENTA Rehm.

On dead branches of *Alnus tenuifolia* Nutt. (14771). Agrees with specimens in Rehm's Ascomyceten, No. 1984 and Tranzschel and Serebrianikow, Mycotheca Rossica, No. 225.

HYALOSPORAE

PHYSALOSPORA GALII Rostr.

Perithecia gregarious, single or 2-4 in a cluster, lenticular or globose-depressed, membranaceous and of loose cellular structure, surrounded at base by brown mycelial hyphae, often seated on yellow or brown discolored areas, immersed, then erumpent, opening by a central pore, black or brown, 100-200 μ in diam.; asci oblong, broad, rounded at both apex and base, 8-spored, 40-44 \times 10-13.33 μ ; spores obliquely biserial or crowded, fusoid-oblong or cymbiform, mostly rounded at the ends, one end apt to be a little broader, simple, continuous, minutely granular or nucleolate, hyaline, 13-17 \times 3.33-6 μ ; paraphyses few, filiform.

On old stems of *Galium boreale* L. (14757 p.p.).

The broad asci differ from Rostrup's original description (Bidr. Ascom. Dovr. in Kristiana Videnskabs-Selskabs Forhandl. 9: 7. 1891. Accompanied by a *Phoma* and *Rhabdospora* too scanty for determination, and **Microdiplodia galiicola** sp. nov.

PHAEOSPORAE

ROSELLINIA PARASITICA E. & E.

On old stems of *Grossularia leptantha* (Gray) C. & B. (14674 p.p.).

ROSELLINIA PULVERACEA (Ehr.) Fckl.

On old log of *Populus angustifolia* James (13562 p.p.) and on *Quercus Fendleri* Liebm. (14722 p.p.).

ROSELLINIA ROSARUM Niessl

On dead branches of *Rosa* (14763 p.p.).

HYALODIDYMAE

MYCOSPHAERELLA IRIDIS (Awd.) Schröt.

On leaves of *Iris missouriensis* Nutt. (13615).

MYCOSPHAERELLA TINGENS Niessl?

On old leaves of *Arenaria Fendleri* Gray (14363 a).

Asci $67 \times 17 \mu$; sporidia oblong, rounded at the ends, uniseptate, one cell narrower, greenish hyaline, $24 \times 6-7 \mu$. The spores are larger than those in the description and the discolored spots on the leaves are rarely present.

MYCOSPHAERELLA PACHYASCA Rostr.

On old stems of *Agoseris* (13731) and on old leaves of *Mertensia caelestina* Nels. & Cockerell.

MYCOSPHAERELLA PRIMULAE (Auersw. & Heufl.) Schröt.

On old stems of *Androsace diffusa* Small (14174).

Didymella nigrescens Dearness & Fairman sp. nov.

Perithecia black, shining on the summit, rather thickly scattered in the darkened surface of the decorticated branchlets, conoid or depressed-globose, base thin or almost disappearing, sunk in the unaltered wood, the ostiolum only, or up to half of the wall, erumpent, .25-.4 mm. in diam.; ostiola minute, round, often in an umbilicate depression; asci clavate-cylindric, obtuse at apex, short-stipitate, 8-spored, $65-90 \times 7-10 \mu$; paraphyses simple, abundant, longer than the asci; spores hyaline, inequilateral, oblong-fusoid, biseriata above, 1-septate, constricted, upper cell larger, sometimes a gutta in each cell, $10-13 \times 3.5-4.5 \mu$.

On old branches of *Symphoricarpos oreophilus* Gray (14754 p.p.).

DIDYMELLA NIGRIFICANS Karst.

On old branches of *Rosa* (14761).

Didymella Eurotiae sp. nov.

Perithecia scattered or gregarious, at first covered by the epidermis, becoming erumpent, finally adnate-superficial, globose, with minute papilliform ostiola, .3–3.5 mm. in diam., dull black; asci clavate-cylindric, rounded at the apices, long-stipitate, 8-spored, $133 \times 10 \mu$; spores oblong-fusoid, uniseptate, slightly constricted at the septum, obliquely uniseriate, each cell with a large nucleus, hyaline, $20\text{--}23 \times 6\text{--}7 \mu$.

On old branchlets of *Eurotia lanata* (Pursh) Moq. (14791 p.p.).

A *Pleospora* and a *Phoma* in small quantities are associated with the above.

Apiospora cornina sp. nov.

Perithecia scattered or gregarious, depressed-globose or markedly flattened, at first covered by a thin layer of the epidermis, suberumpent, elevating the epidermis in minute pustules, black, $200\text{--}250 \mu$ in diam.; asci clavate-cylindric, short-stipitate, rounded at the apex, 8-spored, $40\text{--}50 \times 13\text{--}15 \mu$, surrounded by filiform paraphyses; spores irregularly biserial, oblong-obovate, subrotund at the ends, uniseptate, the septum being formed about one third the way up from the base, not constricted, the upper cell twice as large as the lower, hyaline then golden-yellow, $20\text{--}23.33 \times 6.66\text{--}7 \mu$.

Differs from *Apiospora sepincoliformis* (DeNot.) Trav. in the spores, which are larger, with a subellipsoid but not cuneiform base, and with the septum formed farther from the end. In the generic name the writer follows von Höhnelt, who (Fragmente, VIII, No. 389), referring *Apiospora* to the *Dothideales*, institutes the genus *Apiospora* for *Apiosporae* without a stroma. Because the spores of *Apiospora cornina* become yellow at maturity, those mycologists who do not refer to the hyaline-spored sections any fungus which has a more or less decided tint to the spores would, perhaps, refer our plant to *Phaeoapiospora* Sacc. & Syd., a genus tentatively proposed in Sacc. Syll. XVI, 477. But von Höhnelt, loc. cit., considers the species described in the

Sylloge as *Phaeoapiosporae* to be *Didymosphaeriae* with unequal spore cells.

CERIOSPORA DUBYI Niessl

On old stems of *Humulus americanus* Nutt. (14564 p.p.).
Host new.

CERIOSPORA MONTANIENSIS E. & E.

On old stems of *Clematis ligusticifolia* Nutt. (13679 p.p.).

MELANOPSAMMA POMIFORMIS (Pers.) Sacc.

On a log of *Populus angustifolia* James (13552).
This is the var. *minor* of Saccardo.

DIAPORTHE OLIGOCARPOIDES Rehm

Asci clavate-cylindric, rounded at the apex, short-stipitate, 8-spored, $73-80 \times 7-8 \mu$, paraphyses not seen; spores uniseriate, oblong-ellipsoid, uniseptate, not constricted, one or two oil-drops of varying magnitude in each cell, $10-12 \times 3.33-4 \mu$.

Differs slightly from the description in subcylindric, unconstricted and broader spores. Probably unreported from the United States. On old stems of *Rosa* (14761).

PHAEODIDYMAE

OTTHIA FRUTICOLA E. & E.

Otthia Clematidis Earle?

On old stems of *Clematis ligusticifolia* Nutt. (14565 p.p.).

PHAEOPHRAGMIAE

LEPTOSPHERIA DUMETORUM Niessl

On old stems of *Ratibida columnifera* (Nutt.) Woot. & Standley (14742), on old stems of *Nuttalia Rusbyi* (Woot.) Cockerell (14770), on old stems of *Agrimonia striata* Michx. (14731), and on old stems of *Melilotus alba* Desr. (14783). Also on old stems of *Senecio scopulina* Greene (14583) with a *Rhabdospora* which may be connected with it presenting the following characteristics.

Pycnidia scattered or gregarious, immersed, becoming erumpent-superficial, centrally ostiolate, globose-depressed, black, 100–150 μ in diam.; spores filiform, straight or curved, simple, continuous, hyaline, about $27\text{--}30 \times .5\text{--}1 \mu$, **Rhabdospora dumetorum** sp. nov.

LEPTOSPHERA DOLIOLUM (Pers.) DeNot.

On old stems of *Heliopsis scabra* Dunal (13653).

Leptosphaeria nigricans Grindeliae var. nov.

Perithecia scattered or gregarious, on blackened areas on the stems, depressed-globose, finally collapsing, flattened, or sub-umbilicate, black, 250–300 μ in diam.; asci clavate-cylindric, rounded at the apex, short-stipitate, 8-spored, $70\text{--}100 \times 10 \mu$, surrounded by numerous filiform paraphyses; spores subbiseriate, 3–5-septate, slightly constricted at the middle septum, oblong-fusoid, hyaline at first, becoming yellow or greenish-yellow, $23\text{--}27 \times 3.33\text{--}4 \mu$.

Differs from *Leptosphaeria nigricans* Karst. (of which *Leptosphaeria tenera* Ellis is a small-spored form) in gregarious, collapsing perithecia.

LEPTOSPHERA OGILVIENSIS (B. & Br.) Ces. & DeNot.

On old stems of *Pericome caudata* Gray (14599), on old stems of *Machaeranthera Bigeloviae* (Gray) Greene (14739), and on old stems of *Delphinium robustum* Rydb. (13664).

LEPTOSPHERA PRAECLARA TYPHISEDA (Sacc. & Berl.) Berl.

On old stems of *Typha latifolia* L. (14746).

LEPTOSPHERA CULMIFRAGA MINUSCULA Rehm.

On old stems of *Elymus canadensis* L. Spores 6–8-septate, $30 \times 3.33 \mu$.

LEPTOSPHERA LUPINCOLA Earle, Pl. Bak. 2: 20. 1901

On old stems of *Lupinus ingratus* Greene. This is in limited quantity, for the most of this collection (14678) is a *Phoma* with

oblong, guttulate spores, $6 \times 1.5-2 \mu$, apparently different from *Phoma lupincola* Earle from Durango, Col. No. 14678 has, also, a few scattered perithecia of *Pleospora herbarum* (Pers.) Rabh., the typical form as noted by Earle, loc. cit., p. 22.

Leptosphaeria Quamoclidii sp. nov.

Perithecia scattered, globose or globose-conoid, with a minute papilliform ostiolum, black, $200-250 \mu$ in diam.; asci cylindric, rounded at the apex, short-stipitate, 8-spored, $80-100 \times 7 \mu$; spores overlapping uniseriate, oblong-fusoid, 3-septate, slightly constricted at the septa, $13-17 \times 6 \mu$, brown.

On old stems of *Quamoclidion multiflorum* Torr. (14790 p.p.).

Leptosphaeria Coleosanthi sp. nov.

Perithecia scattered, immersed, becoming erumpent-superficial, globose or globose-depressed, with a more or less elongated papilliform ostiolum, which as a rule just protrudes, black, $250-350 \mu$ in diam.; asci clavate-cylindric, varying from short to long-stipitate, 8-spored, $90-135 \times 10-12 \mu$; spores irregularly biseriate, fusoid, 3-5-septate, not markedly constricted, yellow or yellowish-brown, $40-50 \times 3.33-4 \mu$; paraphyses numerous, filiform.

On old stems of *Coleosanthus reniformis* (Gray) Rydb. (14597).

LEPTOSPHERA HELIANTHI E. & E.

On *Helianthus Maximiliani* Schrad. Immature and doubtful (14659).

LEPTOSPHERA RUBROTINCTA E. & E.

Spores fusoid, curved, multiseptate, about $60 \times 4 \mu$, these dimensions agreeing with those of Berlese (Berlese, Ic. Fung. fasc. 2: 84 and tab. LXXVI, fig. 2), who says "et usque 60μ longa."

On *Ligusticum Porteri* C. & R. (14651).

Gibberidia arthrophyma sp. nov.

Perithecia densely cespitose, erumpent through acutely ellipsoid clefts of the outer bark, globose, externally rugose, minutely

and centrally ostiolate, often somewhat umbilicate around the ostiola, dull-black, $250-300\mu$ in diam.; asci clavate-cylindric, rounded at the apex, short-stipitate, 8-spored, $100 \times 10-12\mu$; spores irregularly biseriate, very rarely uniseriate, oblong-fusoid, 4-septate, constricted more strongly at the third septum, the upper portion of the spore larger and trilocular, the lower bilocular, the third or middle cell markedly enlarged, straight or curved, obtuse at the ends, hyaline at first, finally yellow or pale-brown, $20-23 \times 7\mu$.

On old stems of *Chrysothamnus graveolens* (Nutt.) Greene (14782). Accompanied by a *Phoma* whose pycnidia are black, $150-250\mu$ in diam. filled with round or oblong, hyaline, nucleolate spores, $3.3-4.5 \times 3.3\mu$.

PHAEODICTYAE

PLEOSPORA BARDANAE Niessl

On *Isocoma heterophylla* (Gray) Greene, Bueyeros, Sept., 1916, Father A. Estrelt.

PLEOSPORA COMPOSITARUM Earle

On old stems of *Kuhnia rosmarinifolia* Vent. (14718).

Spores 6-7-septate, muriform, $20-23 \times 10\mu$. This is probably the small-spored form on *Compositae* noted by Earle (Pl. Bak. 2: 21) but it is doubtfully distinct, and may be *Pleospora herbarum* f. *microspora* Sacc.

PLEOSPORA HERBARUM (Pers.) Rabh.

On old leaves of *Arenaria Fendleri* Gray (14363 a), on old stems of *Chrysopsis hispida* (Hook.) Nutt. (14721), on *Lacinaria punctata* (Hook.) Kuntze (14793), on old stems of *Potentilla filipes* Rydb. collected at Baldy Peak (14368 a), on old stems of *Allionia linearis* Pursh (14788), and on old stems of *Lithospermum multiflorum* Torr. (14716). From Baldy Peak there were two collections of the large spored form, viz., on old leaves of *Trifolium nanum* Torr. (14325) with spores 6-7-septate, $36-40 \times 13.33\mu$ and on *Trifolium stenolobum* Rydb. (14328 a) with spores 7-9-septate, $30-40 \times 13-17\mu$.

PLEOSPORA COLORADENSIS E. & E.

On old stems of *Polemonium confertum* Gray (14159).

PLEOSPORA VULGATISSIMA Speg.

Asci clavate-cylindric, short-stipitate, 8-spored, $80-85 \times 20 \mu$; spores irregularly biseriate or crowded, constricted only at the middle septum, 3-7-septate, muriform, the upper part of the spore larger and more obtuse, yellowish-brown to dark-brown, $20-36 \times 10 \mu$.

On *Baccharis Wrightii* Gray (13801). Doubtfully distinct from some forms of *P. herbarum*.

PLEOSPORA VULGARIS Niessl

Pleospora Senecionis Earle (Pl. Bak. 2: 22) 1901, not *Pleospora Senecionis* Fckl., 1869 (Symb. Mycol., p. 136) which is *Metasphaeria Senecionis* Sacc. (*Leptosphaeria Senecionis* Wint.).

On old stems of *Senecio amplexans* Gray, Baldy Peak (14310 a).

PLEOSPORA INFECTORIA Fckl.

On old leaves of *Danthonia intermedia* Vasey, Baldy Peak (14312 p.p.). Berlese reduces the preceding species to this.

PLEOSPORA RUBICUNDA Niessl

On old stems of *Typha latifolia* L. (14746 p.p.).

CLATHROSPORA PERMUNDA (Cooke) Berl.

On *Sporobolus auriculatus* Vasey (13617), on *Lycurus phleoides* H.B.K. (15573) and *Allionia linearis* Pursh (14788 p.p.).

PYRENOPHORA CHRYSOSPORA POLARIS Karst.

On old stems of *Psoralea tenuiflora* Pursh (14786) and on old stems of *Mertensia caelestina* Nels. and Cockerell (14329 a, p.p.) from Baldy Peak.

PYRENOPHORA COMATA (Awd. & Niessl) Sacc.

On old stems of *Petalostemum oligophyllum* (Torr.) Rydb. (14719 p.p.). Associated with *Hendersonia Petalostemonis*.

Pyrenophora Leucelenes sp. nov.

Perithecia black, minute, $100-150\mu$ in diam., scattered, immersed, becoming erumpent-superficial, globose, crowned with a few short, stout setae, brown at base, hyaline at tips, straight and rigid, $20-70\mu$ long and $3-4\mu$ broad; asci obovate, rounded at apex, short-stipitate, 8-spored, $80-85 \times 30-33\mu$; spores irregularly tristichous or conglobate, 6-7-septate, constricted at the middle septum, upper half of the spore more obtuse, the obtuse portion with bulging episporic wall from the middle septum up to the second septum from the middle, cells divided by 1-3 longitudinal septa, yellow at first, becoming dark-brown and finally opaque, $30 \times 13.33\mu$.

Distinguished by minute perithecia, short, broad asci and bulging-walled spores.

On stems and leaves of *Leucelene arenosa* Heller (13572). Accompanied by several deuteromycetes which may be stages of the development of the *Pyrenophora*. Inasmuch as these fungi imperfecti are so minute, and the leaves and stems of the host also, it was not practicable to separate them and all are included in one packet. It seems best, therefore, to describe them in this connection.

1. **Hendersonia Leucelenes** sp. nov.

Pycnidia scattered, globose-depressed, black, about 250μ in diam.; spores oblong, straight or curved, varying from obtuse to subacute at the ends, 3-septate, not markedly constricted, hyaline and nucleolate at first, becoming brown, $10-14 \times 4-6\mu$; basidia inconspicuous.

2. **Microdiplodia Leucelenes** sp. nov.

Pycnidia immersed or suberumpent, globose or globose-depressed, brown or blackish, 100μ in diam.; spores numerous, exuded in a mucous mass, oblong or ellipsoid, uniseptate, not constricted, ends rounded, $7-9 \times 3-4\mu$, brown, with basidia concealed by mucus.

3. PHOMA near P. HERBARIUM

Hab. of Nos. 1, 2, and 3, *Leucelene arenosa* Heller.

TEICHOSPORA RHODINA (Earle)

Strickeria rhodina Earle in Pl. Bak. 2: 16. 1901.

On old branches of *Schmaltzia Bakeri* Greene (14756).

Spores 5-7-septate, $23-30 \times 10 \mu$, muriform.

Teichospora rhyodes, *Teichospora rhodina* and *Teichospora stenocarpa*, all found on *Rhus*, vary so little as to render it probable that they represent one species.

Teichospora Cercocarpi (Earle)

Strickeria Cercocarpi Earle, Pl. Bak. 2: 14.

On dead branches of *Cercocarpus montanus* Raf. (13659 p.p.).

TEICHOSPORA OBDUCENS (Fr.) Fckl.

On *Quercus Fendleri* Liebm. (14722).

TEICHOSPORA PYGMAEA E. & E.

On old log of *Populus angustifolia* James (13562).

CUCURBITARIA RIBIS Niessl

On old stems of *Grossularia leptantha* (Gray) C. & B. (14674), sparingly, also, on denuded places on branches of *Ribes aureum* Pursh (14736).

CUCURBITARIA ROSAE Wint. & Sacc.?

On dead branches of *Rosa* (14763 p.p.).

SCOLECOSPORAE

OPHIOBOLUS CLAVIGER Harkn.

On old stems of *Artemisia scouleriana* (Besser) Rydb. (14753).

OPHIOBOLUS COLLAPSUS Sacc. & Ellis

On old stems of *Verbena Macdougalii* Heller (13644).

Family: HYPOCREACEAE

SPERMOEDIA CLAVUS (DC.) Fr.

On *Agropyron Smithii* Rydb. (13749) and *Agropyron tenerum* Vasey (13747).

Family: DOTHIDEACEAE

PHYLLACHORA AMBROSIAE (B. & C.) Sacc.

Physalospora Ambrosiae E. & E., *Physalospora Arthuri* Sacc.
On leaves of *Helianthus Maximiliani* Schrad. (13565).

PHYLLACHORA TRIFOLII (Pers.) Fckl.

On *Trifolium Fendleri* Greene (13546), sterile.

PHYLLACHORA VULGATA Theiss. & Sydow

On *Muhlenbergia cuspidata* (Torr.) Rydb. (14079) and on *Muhlenbergia trifida* Hac. (14183).

Phyllachora Blepharoneuri sp. nov.

Stromata visible on both sides of the leaves, elongate, slightly arched, in the process of growth elevating the nerves of the leaves thereby forming an epistromatic ridge, the ridge often remaining as a persistent, undestroyed septum between the loculi, 1-3 mm. long, 1 mm. broad, black; loculi rounded, 2-10 or possibly more in a stroma; asci and paraphyses as in *P. graminis*; spores monostichous, ellipsoid, eguttulate, hyaline, $10 \times 6-7 \mu$.

On leaves of *Blepharoneuron tricholepis* (Torr.) Nash (13662).

EURYACHORA BETULINA (Fr.) Schr.?

On leaves of *Betula fontinalis* Sarg. (14662). Immature.

DOTHIDELLA INSCULPTA (Wallr.) Theiss. & Syd.

On old stems of *Clematis ligusticifolia* Nutt. (13679 p.p.).

Family: LOPHIOSTOMATACEAE

LOPHIOSTOMA QUADRINUCLEATUM Karst.

On old branches of *Ribes inebrians* Lindl. (14734) and on old stems of *Artemisia frigida* Willd. (14745).

PLATYSTOMUM COMPRESSUM (Pers.) Trev.

On old branches of *Ribes inebrians* Lindl. (14734 p.p.) and on old branches of *Salix cordata Watsoni* Bebb (14740). Also abundant on old branches of *Crataegus erythropoda* Ashe (14781).

LOPHIDIOPSIS NUCULOIDES (Rehm) Berl.

On old branches of *Symphoricarpos oreophilus* Gray (14754 p.p.). Only a few scattered perithecia found.

Family: HYSTERIACEAE

Hysterium Standleyanum sp. nov.

Perithecia scattered, rarely 2-3-seriate, erumpent-superficial, narrowly elliptic, lips closely connivent except in the middle somewhat open, black, .5-2 mm. long; asci clavate-cylindric, rounded at the apex, short-stipitate, 8-spored, $70-75 \times 10 \mu$; spores overlapping biseriate, oblong-fusoid, straight or curved, subobtuse at the ends, 4-7-septate, unconstricted, the third or fourth superior cell globose, enlarged, each cell nucleolate when young, hyaline at first, becoming yellow or reddish-brown, $20-23 \times 3.33-4.5 \mu$.

Differs from *Hysterium Notarisianum* Rehm in narrower and longer spores, in the location of the enlarged cell, and in the absence of any occasional longitudinal septum in any of the cells.

On old scrub oak branches (*Quercus Fendleri* Liebm. ?) (14693).

HYSTEROGRAPHIUM BAKERI Earle

On old branches of *Cercocarpus montanus* Raf. (14789 p.p.).

LOPHODERMIMUM ARUNDINACEUM (Schrad.) Chev.

On *Koeleria cristata* (L.) Pers. (13591), on *Calamagrostis hyperborea americana* Vasey (13624) and on old leaves of *Danthonia intermedia* Vasey (14312 a, p.p.). The form on *Danthonia* is probably the var. *alpinum* of Rehm.

Order: PEZIZALES

LACHNELLA FLAMMEA (A. & S.) Fr.

Lachnella rhoina Earle Pl. Baker 2: 5, 1901.

On old branches of *Schmaltzia Bakeri* Greene (14720, 14756 p.p.).

FABRAEA LITIGIOSA (R. & D.) Sacc. ?

On leaves of *Cyrtorhynca ranunculina* Nutt. (13982), not mature.

PSEUDOPEZIZA MEDICAGINIS (Lib.) Sacc.

On *Medicago sativa* L. (14444).

RHYTISMA SALICINUM (Pers.) Fr.

On leaves of *Salix Bebbiana* Sarg. (14661).

Patellea oreophila sp. nov.

Apothecia sessile, scattered over the surface of the bare wood, at first immersed in or embraced by the fibers of the wood, becoming erumpent-superficial, lecideiform, thinly margined, black, .5-1 mm. in diam.; asci clavate-cylindric, rounded at apex, short-stipitate, 8-spored, $60-80 \times 10-12 \mu$, iodine reaction negative; paraphyses numerous, filiform, not over $1-1.5 \mu$ broad, simple, rarely branching, wavy-flexuose, not apically enlarged; spores biseriate, fusoid, at times crescentic or falcate-sigmoid, subacute at the ends, uniseptate, the septum not always medial, not constricted, hyaline to pale-greenish, $27-30 \times 4-7 \mu$; excipulum brown.

On old decorticated branchlets of *Symphoricarpos oreophilus* Gray (14661 p.p.). No traces of lichen gonidia found.

SCHIZOXYLON INSIGNE (De Not.) Bres.

On old branches of *Crataegus erythropoda* Ashe (14781 p.p.) Only a few scattered ascomata found.

DEUTEROMYCETES

Order: SPHAEROPSIDALES

Family: PHYLLOSTICTACEAE

HYALOSPORAE

PHYLLOSTICTA CRATAEGI (Cooke) Sacc.

On *Crataegus erythropoda* Ashe (14563).

PHOMA ASCLEPIADEA E. & E.

On old stems of *Asclepias speciosa* Torr. (14730).

PHOMA ASTRAGALI Cooke & Hark.

On old stems of *Astragalus oreophilus* Rydb. (14663).

PHOMA COMPLANATA (Tode)

On old stems of *Heracleum lanatum* Michx. (14640).

PHOMA CORNI-SUECIAE (Fr.)

On dead branches of *Cornus instolonea* A. Nels. (14780 p.p.).
Det. Dearness.

Phoma Estrelti sp. nov.

Pycnidia numerous, immersed, then erumpent, globose or globose-depressed, centrally ostiolate, black, about 300μ in diam.; spores numerous, oblong-elliptic, hyaline, $6-8 \times 3-4\mu$, basidia not observed.

On *Isocoma heterophylla* (Gray) Greene, Bueyeros, Sept., 1916, Father A. Estrelt.

PHOMA EXIGUA Desm.

On *Polygonum sawatchense* Small (14113), on old stems of *Comandra pallida* A.DC. (14769) and on old stems of *Eurotia lanata* (Pursh) Moq. (14791 p.p.).

PHOMA HERBARUM West.

On old stems of *Gaertneria acanthicarpa* (Hook.) Kuntze (14767), on old stems of *Aster Novae-Angliae* L. (14654), on old stems of *Agrimonia striata* Michx. (14731), on old stems of *Senecio spartioides* T. & G. (14738), on same host (14758), on dead stems of *Pedicularis fluviatilis* Heller (14486), and on stems of *Thermopsis Pinetorum* Greene (14744).

PHOMA HERBARUM MEDICAGINIS Rabh.

On dead stems of *Medicago sativa* L. (14759).

PHOMA HERBARUM SOLIDAGINIS Sacc.

On old stems of *Solidago Pitcheri* Nutt. (14743).

PHOMA OLERACEA Sacc.

On old stems of *Heliopsis scabra* Dunal (14648).

PHOMA RUDBECKIAE Fairman

On old stems of *Rudbeckia laciniata* L. Immature.

Phoma Sidalceae sp. nov.

Pycnidia scattered on whitened areas or gregarious on oblong black spots, globose or oblong, immersed then erumpent, black, $175-200 \times 140 \mu$; spores numerous, oblong or elliptic, rounded at the ends, simple, 2-3-nucleolate, hyaline, $4-7 \times 3-4 \mu$, with inconspicuous basidia.

On old stems of *Sidalcea ncomexicana* Gray (14251).

PHOMA THALICTRINA Sacc. & Malbr.

On old stems of *Thalictrum Fendleri* Engelm. (14652) and on *Thalictrum dasycarpum* F. & L. (14658).

MACROPHOMA CORNINA (Peck) Sacc.

On dead branches of *Cornus instolonea* A. Nels. (14780 p.p.).

Dothiorella phomopsis sp. nov.

Pycnidia immersed in a basal stroma and aggregated in groups of 1-5, often at the bottom of *Stictis*-like depressions, or occurring singly and without evident stroma, when occurring singly arranged in a subseriate manner between the longitudinal ribs of the stem and becoming erumpent-superficial, globose-depressed, of loose cellular structure, centrally ostiolate, contents white upon section, externally brown or black, $150-300 \mu$ in diam.; spores borne on stout basidia, numerous, oblong-ellipsoid, rounded at the ends, hyaline, eguttulate, $4-8 \times 3-4 \mu$.

On old stems of *Viorna Scottii* (Porter) Rydb. (14627).

This is an ancipital fungus, alternating between *Phoma* and *Dothiorella*.

Placosphaeria decipiens Dearness & Fairman sp. nov.

Stromata brown or dull black, subcircular, 1–3 mm. in diam., more frequently linear or effuse, on areas which are red at first; pycnidia black, sub-carbonaceous, hemispheric, 90–200 μ , one or mostly several in a linear series arising more than half their height above the basal stroma, normally 4-sulcate at top; conidia cylindric with rounded ends, hyaline, nucleate, $12\text{--}35 \times 4\text{--}6 \mu$, the longer ones sometimes seeming uniseptate.

On leaves, flower-bracts and stems of living *Aster vallicola* Greene, Ute Park, Colfax Co., Sept., 1916, Paul C. Standley, No. 14253.

The affected branchlets become completely darkened with the stromata,—very closely simulating *Dothidea* (*Ophiodothis* or *Phyllachora*) *Haydeni* B. & C. but lacking the shining luster of the latter as well as its depressed and serpentine perithecia. Specimens were sent to Dr. Geo. F. Atkinson who has (Jour. of Mycol. 11: 257) recorded the results of his examination of the specimens of *Dothidea Haydeni* from the Kew Herbarium. Atkinson says, in litt., “The spores are larger than those of the type of *O. Haydeni* and also larger than those of F. Col. No. 1332. They are also different in shape according to my observations, that is, they are not attenuate at the ends.” The feature of the longer spores being 2-celled or at least with the plasma divided was not observed in F. Col. No. 1332, nor in the type of *D. Haydeni*. In this respect the fungus on *Aster vallicola* approaches *Placosphaerella*.

PHAEOSPORAE

Coniothyrium sepium sp. nov.

Pycnidia scattered or gregarious, immersed then pustuliform-erumpent, subglobose or lenticular, thin-walled, fragile, apparently astomous, black (brown under the microscope) about 100–250 μ in diam.; basidia not seen; spores very numerous, rounded or ellipsoid, ends usually rounded, at times subacuminate or pseudo-apiculate at one end, cell walls thick and dark brown, cell contents light brown and minutely punctate, 1 or more guttulate, $6.66\text{--}10 \times 6.66 \mu$.

On old stems of *Convolvulus sepium* L. (14578).

Under examination with a B. & L. one-twelfth imm. lens the punctate appearance is seen to be due to minute granules in the substance of the spores.

Coniothyrium olivaceum Salsolae var. nov.

Pycnidia scattered or gregarious, seated on the inner bark, becoming erumpent-superficial, globose, with a central pore from $6-8\mu$ broad, black, $120-200\mu$ in diam.; spores rounded or ellipsoid, subhyaline, becoming smoky, $4-8 \times 4-5\mu$.

On old stems of *Salsola Pestifer* A. Nels. (14765 and 14221).

Coniothyrium olivaceum Thermopsisidis var. nov.

Pycnidia numerous, scattered, immersed, then erumpent and raising the epidermis in minute pustuliform elevations, globose or globose-depressed, $130-200\mu$ in diam.; spores numerous, rounded or ellipsoid, continuous, at first hyaline, becoming smoky-brown, darker in mass, $5-6 \times 3.33\mu$.

On old stems of *Thermopsis pinetorum* Greene (14744 p.p.).

CONIOTHYRIUM CONCENTRICUM YUCCAE-GLAUCAE Sacc.

On old stems of *Yucca glauca* Nutt. (14243 p.p.). Cfr. Brenckle, Fungi Dak. No. 428.

CONIOTHYRIUM MYRIOCARPUM (Fr.) Sacc.

On a log of *Populus angustifolia* James (13562 a) associated with *Rosellinia pulveracea* of which, sec. Fuckel, it is the pycnidial stage.

HYALODIDYMAE

Ascochyta Boutelouae sp. nov.

Pycnidia black, scattered and immersed in the substance of the leaves, becoming erumpent, depressed-globose, of thin membranaceous texture, round and about 55μ in diam., or oblong $90-150\mu$ in length, with a central ostiolum about 10μ broad; spores numerous, oblong-cylindric, obtusely rounded at the ends, 4-5-nucleolate at first, then uniseptate, slightly constricted, hyaline or greenish-hyaline, $17-20 \times 6-7\mu$.

On *Bouteloua gracilis* (H.B.K.) Lag. Distinct from *Ascochyta*

graminicola Sacc. in broader spores which are not attenuated at the ends. Standley (14256).

PHAEODIDYMAE

MICRODIPLODIA VICIAE Peck

On *Vicia americana* Muhl. (14176).

Microdiplodia galiicola sp. nov.

Pycnidia scattered or gregarious, globose or globose-depressed, immersed in the inner bark, pustuliform-erumpent, or left exposed by the falling away of the epidermal layers of the cortex, dark-brown, 150–250 μ in diam.; basidia not seen; spores numerous, oblong or elliptic, rounded at the ends, uniseptate, slightly constricted at the septum, brown, 7–10 \times 3–4 μ .

On old stems of *Galium boreale* L. (14757).

Microdiplodia Anograe sp. nov.

Pycnidia scattered, globose, minute or punctiform, black, 130–150 μ in diam.; spores numerous, variable in form, oblong and rounded at the ends or oblong-fusoid and subacute at the ends, uniseptate, not markedly constricted, brown, 6–9 \times 3.5 μ ; basidia inconspicuous.

On old stems of *Anogra coronopifolia* (T. & G.) Britton (14768 p.p.). Associated with a *Mycosphaerella* which is close to *Mycosphaerella Oenotherae* (E. & E.) but in insufficient amount for determination.

Ascochyta agropyrina sp. nov.

Pycnidia scattered or gregarious, erumpent, globose, black, 250–320 μ in diam.; spores oblong-cylindric, rounded at the ends, uniseptate, constricted at the septum, external cell walls often depressed-concave near the middle, at first hyaline, becoming yellow or greenish-yellow and finally pale-brown, nucleolate, 17–23 \times 6 μ .

On old leaves of *Agropyron Bakeri* A. Nels. (14330 a, p.p.)
Cfr. Diedicke on the genus *Ascochyta*, Ann. Mycol. 10: 141.

HYALOPHRAGMIAE

KELLERMANNIA SISYRINCHII E. & E.

On *Sisyrinchium demissum* Greene (14092).

KELLERMANNIA YUCCAEGENA E. & E.

On old leaves of *Yucca glauca* Nutt. (14243).

STAGONOSPORA CHENOPODII Pk.

On *Chenopodium album* L. (14214).

STAGONOSPORA GRAMINELLA Sacc.

On *Sporobolus auriculatus* Vasey (13617).

Stagonospora Humuli-americanii sp. nov.

Pycnidia scattered or gregarious, immersed; becoming erumpent-superficial, depressed-globose, centrally ostiolate, brown or black, about one third of a millimeter in diam.; spores oblong-cylindric, rounded at the end, 1-3-septate, not constricted, mostly straight, hyaline, subhyaline in mass, $17-30 \times 3-4 \mu$.

On stems of *Humulus americanus* Nutt. (14564 p.p.).

PHAEOPHRAGMIAE

Hendersonia Stanleyellae sp. nov.

Pycnidia scattered or gregarious, subepidermal, depressed-globose, black, $150-175 \mu$ in diam.; spores ellipsoid, or fusoid-oblong, ends attenuated and subacute, 3-septate, not constricted, olivaceous or brown, $13-20 \times 6-7 \mu$.

On old stems of *Stanleyella Wrightii* (Gray) Rydb. (13516).

Hendersonia Eriogoni sp. nov.

Pycnidia scattered, immersed, then erumpent-superficial, conoid or globose, with minute, protruding, papilliform ostiola, black, $200-300 \mu$ in diam.; spores numerous, oblong, rounded at the ends, triseptate, not constricted, with a large gutta in each cell, light-brown at first, becoming dark-brown or sub-opaque, $13-17 \times 6.5 \mu$.

On old stems of *Eriogonum alatum* Torr. (14787).

Hendersonia Petalostemonis sp. nov.

Pycnidia immersed, then erumpent, scattered, globose or globose-depressed, with a flattened base and minute, cylindric, slightly projecting ostiola, black, 250μ in diam.; spores abundant, oblong-ellipsoid, rounded at the ends, somewhat variable in form, one end often larger, 3-septate, slightly constricted, brown, $10-13 \times 7-8\mu$.

On old stems of *Petalostemon oligophyllus* (Torr.) Rydb. (14719 p.p.).

Hendersonia subcultriformis sp. nov.

Pycnidia sparse, globose, at times with mycelial hairs surrounding the basal portion, centrally ostiolate or papillate, black, $250-300\mu$ in diam.; basidia short or inconspicuous; spores abundant, fusoid or subfalcate, rounded at one end, the other end subacuminate, sharply bent, couler-shaped or subrostrate, 5-7-septate, each cell uniguttulate, hyaline becoming brown with age, $27-33 \times 6-7\mu$.

On old leaves of *Agropyron Bakeri* E. Nels. (14330 p.p.).

Differs from *Hendersonia crastophila* Sacc. in its rostrate, multi-guttulate spores, and from *Hendersonia Agropyri* Rostr. in differently shaped spores with more numerous septa.

HENDERSONIA FOLIORUM Fckl.

On old leaves of *Primula angustifolia* Torr. (14349 a).

Cryptostictis utensis sp. nov.

Pycnidia immersed, then erumpent, scattered, globose or oblong-elliptic, black, $250-500\mu$ in diam.; spores oblong-fusoid, $14-17 \times 3-4\mu$, 3-septate, 4-locular, the two middle cells larger, subglobose and brown, the end cells hyaline, acuminate and armed with a hyaline, straight or curved cilium from $10-20\mu$ in length; basidia long, club-shaped, and hyaline, enlarged at the apices.

On old stems of *Anogra coronopifolia* (T. & G.) Britton (14766). Name for Ute Park, the place of collection.

PHAEODICTYAE

CAMAROSPORIUM AMORPHAE Sacc.

On old stems of *Amorpha canescens* Pursh (14615).

CAMAROSPORIUM COMPOSITARUM (C. & H.) Sacc.

On old stems of *Artemisia frigida* Willd. (14726).

Camarosporium Estrelti sp. nov.

Pycnidia immersed, becoming erumpent and exposed in rifts of the bark, flattened-globose, ostiola central and $40-50\mu$ broad, surrounded at the base by brown mycelial threads, black, $200-300\mu$ in diam.; spores oblong-elliptic, often irregular in form, abundant, 2-4-septate, slightly constricted, one or more of the cells with longitudinal septa, brown, $12-18 \times 6-8\mu$, borne on moderately long sporophores.

On *Isocoma heterophylla* (Gray) Greene, Bueyeros, Sept., 1916, Father A. Estrelt.

CAMAROSPORIUM PATAGONICUM Speg.

On old stems of *Atriplex canescens* (Pursh) Nutt. (14715).

Camarosporium yuccaesedum sp. nov.

Pycnidia scattered or gregarious, subepidermal, becoming erumpent-superficial, globose or conoid, black, at least 200μ in diam.; spores numerous, variable in shape, globose, oblong-elliptic or flask-shaped, usually rounded at the ends, occasionally truncate at one end, 3-5-septate, very slightly constricted at the septa, one or more of the cells with a longitudinal septum, light-brown to dark-brown, $20-30 \times 10-17\mu$, borne on stout, cylindric, hyaline basidia.

On dead leaves of *Yucca baccata* Torr. (13517).

SCOLECOSPORAE

SEPTORIA GAURINA E. & K.

On *Gaura induta* Woot. & Standl. (14519), on *Gaura parviflora*, Dougl. not numbered.

SEPTORIA HELIANTHI E. & K.

On leaves of *Helianthus annuus* L. (14467 a).

SEPTORIA OENOTHERAE West.

On leaves of *Lavauxia flava* A. Nels. (14439) and *Oenothera Hookeri* T. & G. (14580).

SEPTORIA SMILACINA E. & M.

On leaves of *Vagnera stellata* (L.) Greene (14264).

Rhabdospora gauracea sp. nov.

Pycnidia cauliculous, gregarious, immersed, then erumpent, depressed-globose, opening by a round or oblong pore, brown or black, $75-100\mu$ in diam.; spores filiform, straight or curved, nucleolate, hyaline, $30-40 \times 2.5-3\mu$.

On old stems of *Gaura induta* Woot. & Standl. (14766). This may be the stem form of *Septoria gaurina* E. & K. Potebnia states (Ann. Mycol. 8: 65 et seq.) "es ist zweifellos das einige Rhabdospora-Arten mit den entsprechenden Septoria-Arten identisch sind."

PHLOEOSPORA OXYTROPIDIS Ell. & Gall.

On *Oxytropis Lambertii* Pursh (13802).

Order: MELANCONIALES

Family: MELANCONIACEAE

GLOEOSPORIUM POTENTILLAE (Desm.) Ouds.

On *Argentina anserina* (L.) Rydb. (13562) and *Argentina argentea* Rydb. (14076). The teratology of this fungus is considered by Dr. Ernst Voges (Zeit. f. Pflanzenkr. 21: 269. 1911).

Order: MONILIALES

Family: DEMATIACEAE

CLADOSPORIUM HERBARUM (Pers.) Lk.

On stems of *Lygodesmia juncea* (Pursh) Don. (14725), on *Agropyron Smithii* Rydb. (14301), on old stems of *Cheirinia* sp. (14187), on *Lactuca pulchella* (Pursh) DC. (14516), on *Sitanion*

longifolium J. G. Sm. (13577), on *Stanleyella Wrightii* (Gray) Rydb. (13516).

No. 14737, on *Machaeranthera Bigelowii* (Gray) Greene is the form of this species called (sec. Ferraris, Fl. Ital. Crypt. Fasc. 8: 331) *Dematium pullulans*. No. 13748 on *Koeleria cristata* (L.) Pers. is, probably, *var. cerealium* of Saccardo.

CLADOSPORIUM FASCICULATUM Corda

On old stems of *Juncus balticus* Willd. (14544).

POLYTHRINICUM TRIFOLII Kunze

On *Trifolium Fendleri* Greene (13331 and 14728).

FUSICLADIUM CERASI (Rabh.) Sacc.

On fruit of *Prunus americana* Marsh (14729).

MACROSPORIUM COMMUNE Rabh.

On dead stems of *Castilleja integra* Gray (14616).

CERCOSPORA MONTANA (Speg.) Sacc.

On *Epilobium adenocladon* (Hausskn.) Rydb. (14107).

Family: TUBERCULARIACEAE

TUBERCULARIA VULGARIS Tode

On dead branches of *Padus melanocarpa* (A. Nels.) Shafer (14777), and on branches of *Salix cordata Watsoni* Bebb (14775).

TRIMMATOSTROMA SALICIS Corda.

On branches of *Salix cordata Watsoni* Bebb (14773).

Family: STILBACEAE

Arthrobotryum (?) pestalozzioides Dearness & Fairman sp. nov.

Synnema monocephalous, seated in the cortex and rising through rifts of the thick epiderm, causing it to feel spiny as the

finger is passed over it, very variable in size but averaging in well developed examples nearly $.8 \times .25$ mm.; capitula black, shining, globose, averaging when dry 270μ in height and 300μ in width, swelling when moist to a globe 630μ in diam.; stem reddish-black, averaging 540μ in length and 230μ in thickness; conidia *Pestalozzia*-like, 3-septate, $20-26 \times 7-11 \mu$, $14-18 \mu$ between the outer septa, curved on one side, the two middle cells brown, often nucleate, upper one larger; end cells hyaline, lower rostrate, upper terminating in 3 filiform cilia, $25-50 \times 2 \mu$; on fasciculate acute conidiophores.

On dead stems of *Clematis ligusticifolia* Nutt. (13679).

This interesting form stands on unnamed ground between *Stilbum* and *Pestalozzia*. Its association on the same stems with *Ceriospora montaniensis* E. & E. and the similarity of the spores make it extremely probable that this is the conidial form of the last named species.

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